

1  
2 What is claimed is:

3  
4 1. A method, comprising:

5 storing network flow information for a first packet received from a first network portion  
6 and storing network flow information for other packets received from other network portions  
7 associated with the first network portion in one or more database records associated with the first  
8 network portion;

9 querying the database for network flow information associated with the first network  
10 portion; and

11 aggregating the network flow information associated with the first network portion in an  
12 aggregate packet.

13  
14 2. The method of claim 1, further comprising transmitting the aggregate packet on  
15 the first network portion.

16  
17 3. The method of claim 1, further comprising:

18 receiving a plurality of packets from the first network portion with an average time  
19 interval between packets equal to  $T$ ;

20 receiving the first packet; and

21 aggregating the network flow information associated with the first network portion in an  
22 aggregate packet at a time  $T$  after the first packet is received.

23  
24 4. The method of claim 1, further comprising:

receiving the first packet;  
incrementing a counter based on receiving the first packet from the first network portion;  
and  
aggregating the network flow information associated with the first network portion in an  
aggregate packet when the counter is at or above a threshold value.

5. The method of claim 4, further comprising:  
transmitting the aggregate packet on the first network portion; and  
decrementing the counter based on transmitting the aggregate packet on the first network  
portion.

6. The method of claim 1, wherein the first network portion is a source virtual  
circuit.

7. The method of claim 6, wherein the first packet is a forward flow control packet  
including flow information for the source virtual circuit and wherein the other packets associated  
with the first network portion are backward flow control packets including flow information for a  
plurality of destination virtual circuits associated with the source virtual circuit.

8. The method of claim 1, wherein the first network portion includes a network  
device that generates the first packet.

47           9.       The method of claim 8, wherein the first network portion further includes at least  
48 one of a switch and a router.

49  
50           10.      The method of claim 1, wherein the other packets associated with the first  
51 network portion include network flow information for the other network portions, the other  
52 network portions associated with multicast packets based on the first packet.

53  
54           11.      A network device, comprising:  
55           circuitry to extract network flow information from a first packet received from a first  
56 network portion and from other packets received from other network portions associated with the  
57 first network portion, the circuitry further to create one or more database records associated with  
58 the first network portion to store at least a portion of the network flow information, the circuitry  
59 further to generate an aggregate packet including network flow information associated with the  
60 first network portion retrieved from the database.

61  
62           12.      The device of claim 11, wherein the circuitry further includes a counter, and  
63 wherein the circuitry is to increment the counter in response to receiving the first packet.

64  
65           13.      The device of claim 12, wherein the circuitry is further to transmit the aggregate  
66 packet on the first network portion, and wherein the circuitry is further to decrement the counter  
67 in response to at least one of generating the aggregate packet and transmitting the aggregate  
68 packet.

70           14.     The device of claim 11, wherein the circuitry is further to generate the aggregate  
71     packet at a time T after receiving the first packet, wherein the time T is an average time between  
72     receiving packets from the first network portion.

73  
74           15.     An article comprising a machine-readable medium storing instructions operable to  
75     cause one or more machines to perform operations comprising:  
76                 storing network flow information for a first packet received from a first network portion  
77     and network flow information for other packets received from other network portions associated  
78     with the first network portion in one or more database records associated with the first network  
79     portion;  
80                 querying the database for network flow information associated with the first network  
81     portion; and  
82                 aggregating the network flow information associated with the first network portion in an  
83     aggregate packet.

84  
85           16.     The article of claim 15, wherein the operations further comprise transmitting the  
86     aggregate packet on the first network portion.

87  
88           17.     The article of claim 15, wherein the operations further comprise:  
89                 receiving a plurality of packets from the first network portion with an average time  
90     interval between packets equal to T;  
91                 receiving the first packet; and

92 aggregating the network flow information associated with the first network portion in an  
93 aggregate packet at a time T after the first packet is received.

94  
95 18. The article of claim 15, wherein the operations further comprise:  
96 receiving the first packet;  
97 incrementing a counter based on receiving the first packet from the first network portion;  
98 and  
99 aggregating the network flow information associated with the first network portion in an  
100 aggregate packet when the counter is at or above a threshold value.

101  
102 19. The article of claim 18, wherein the operations further comprise:  
103 transmitting the aggregate packet on the first network portion; and  
104 decrementing the counter based on transmitting the aggregate packet on the first network  
105 portion.

106  
107 20. The article of claim 15, wherein the first network portion is a source virtual  
108 circuit.

109  
110 21. The article of claim 20, wherein the first packet is a forward flow control packet  
111 including flow information for the source virtual circuit and wherein the other packets associated  
112 with the first network portion are backward flow control packets including flow information for a  
113 plurality of destination virtual circuits associated with the source virtual circuit.

22. The article of claim 15, wherein the first network portion includes a network device that generates the first packet.

23. The article of claim 22, wherein the first network portion further includes at least one of a switch and a router.

24. The article of claim 15, wherein the other packets associated with the first network portion include network flow information for the other network portions, the other network portions associated with multicast packets based on the first packet.